CLAIMS:

1. A catalyst structure for treating exhaust gas from a lean burn internal combustion engine, which catalyst structure comprising a substrate monolith comprising a lean NO_x catalyst (LNC) composition associated with at least one partial oxidation catalyst (POC), wherein the LNC composition is selected from the group consisting of: (a) silver or a silver compound supported on alumina; and (b) at least one metal selected from the group consisting of copper (Cu), iron (Fe), cobalt (Co) and cerium (Ce) supported on at least one zeolite, and wherein the at least one POC is selected from the group consisting of: (i) a bulk oxide, a bulk composite oxide or a bulk mixed oxide comprising at least one metal selected from the group consisting of manganese (Mn), iron (Fe), cerium (Ce) and praseodymium (Pr); and (ii) at least one of rhodium (Rh) and palladium (Pd) disposed on at least one inorganic oxide support.

2. A catalyst structure according to claim 1, wherein the substrate monolith comprises a physical mixture of the LNC composition and the at least one POC.

3. A catalyst structure according to claim 1, wherein the substrate monolith comprises a layer of the at least one POC on a layer of the LNC composition.

4. A catalyst structure according to claim 1, wherein the substrate monolith comprises a layer of the LNC composition on a layer of the at least one POC.

5. A catalyst structure according to any preceding claim, wherein the silver in the LNC composition of group (a) is present in the range 0.5 to 10.0 wt% based on the total weight of the alumina.

6. A catalyst structure according to any preceding claim, wherein the at least one zeolite of the LNC composition of group (b) is selected from the group consisting of ZSM-5, ZSM-8, ZSM-11, ZSM-12, ZSM-20, mordenite, gamma-zeolite, beta-zeolite, silicalite, X zeolite, Y zeolite, L zeolite, erionite, USY zeolite or any mixture of two or more thereof

7. A catalyst structure according to any preceding claim, wherein the total amount of the at least one metal selected from the group consisting of Cu, Fe, Co and Ce in the LNC composition of group (b) is present in the range 0.5 to 10.0 wt% based on the total weight of the zeolite.

8. A catalyst structure according to any preceding claim, wherein the at least one POC of group (i) comprises at least one stabiliser selected from the group consisting of: zirconium (Zr), lanthanum (La), aluminium (Al), yttrium (Y), Pr and neodymium (Nd).

9. A catalyst structure according to claim 8, wherein the at least one stabiliser is present in the molar ratio 2:98M to 90:10M, where M is the at least one metal selected from the group consisting of Mn, Fe, Ce and Pr.

10. A catalyst structure according to any preceding claim, wherein the at least one POC consists of bulk CeO_2 or a mixed oxide or composite oxide of Ce and Zr.

11. A catalyst structure according to any preceding claim, wherein the at least one inorganic oxide support of the at least one POC of group (ii) comprises an oxide of Al, Ce, Zr, titanium (Ti), silicon (Si), magnesium (Mg), chromium (Cr) or a mixture, composite oxide or mixed oxide of any two or more thereof.

12. A catalyst structure according to claim 11, wherein the composite oxide or mixed oxide comprises a zeolite, a non-zeolite silica-alumina, a silica-zirconia, an alumina-zirconia, an alumina-chromia, an alumina-ceria, an ceria-titania or a ceria-zirconia.

13. A catalyst structure according to any preceding claim, wherein a total of 0.5 to 10.0 wt% of Rh and/or Pd is present in the at least one POC of group (ii) based on the total weight of the at least one inorganic oxide support.

14. A catalyst structure according to any preceding claim, wherein the or each POC oxide of group (i) and/or the or each POC inorganic oxide support of group (ii) is doped with at least one of lanthanum (La), barium (Ba), Ce, tungsten (W), Si and Mn.

15. A catalyst structure according to claim 14, wherein the dopant is present in an amount of 0.5 to 20wt%.

16. A catalyst structure according to any preceding claim, wherein the weight ratio of the LNC composition to the at least one POC is from 20:1 to 1:5, optionally from 10:1 to 1:1.

17. An exhaust system for a lean-burn internal combustion engine comprising a catalyst structure according to any preceding claim.

18. An exhaust system according to claim 17, wherein some or all of the LNC composition on the substrate monolith is located downstream of the at least one POC.

19. An exhaust system according to claim 17 or 18, wherein some or all of the LNC composition is located on a separate substrate monolith disposed downstream of the substrate monolith comprising the at least one POC.

20. An exhaust system according to claim 17, 18 or 19, wherein some of the LNC composition on the substrate monolith is located upstream of the at least one POC.

21. An exhaust system according to claim 17, 18, 19 or 20, wherein some of the LNC composition is located on a separate substrate monolith disposed upstream of the substrate monolith comprising the at least one POC.

22. An apparatus comprising a lean-burn internal combustion engine including an exhaust system according to any of claims 17 to 21.

23. An apparatus according to claim 22, comprising means for introducing a reductant into an exhaust gas upstream of the LNC composition

24. An apparatus according to claim 23, when appendant on claim 18 or 19, comprising means for introducing a reductant into an exhaust gas upstream of at least one POC.

25. An apparatus according to claim 22, 23 or 24, wherein the or each reductant introducing means comprises at least one of: means for injecting the reductant into exhaust gas in the exhaust system; means for adjusting the ignition timing of at least one engine cylinder; and means for adjusting the engine air-to-fuel ratio.

26. An apparatus according to claim 22, 23, 24 or 25 comprising a source of hydrocarbon reductant.

27. An apparatus according to claim 26, wherein the hydrocarbon is the fuel that powers the engine.

28. An apparatus according to any of claims 25, 26 or 27, comprising means for controlling the or each reductant introducing means.

29. An apparatus according to claim 28 when appendant on claim 18 or 19, wherein the control means is arranged, when in use, to introduce the reductant into the exhaust gas when the POC is from between 200-350°C in temperature.

30. An apparatus according to claim 28 or 29, wherein the control means is arranged, when in use, to introduce the reductant into the exhaust gas when the LNC composition is above 200°C in temperature.

31. An apparatus according to claim 28, 29 or 30, wherein the control means includes a pre-programmed electronic control unit.

32. An apparatus according to any of claims 22 to 31, wherein the engine is a diesel engine, optionally a heavy-duty diesel engine.

33. A method of selectively reducing NO_x in an exhaust gas of a lean burn internal combustion engine to N_2, which method comprising introducing a reductant into the exhaust gas and contacting the resulting mixture with a lean NO_x catalyst (LNC) composition associated with at least one partial oxidation catalyst (POC), wherein the LNC composition is selected from the group consisting of: (a) silver or a silver compound supported on alumina; and (b) at least one metal selected from the group

consisting of copper (Cu), iron (Fe), cobalt (Co) and cerium (Ce) supported on at least one zeolite, and wherein the at least one POC is selected from the group consisting of: (i) a bulk oxide, a bulk composite oxide or a bulk mixed oxide comprising at least one metal selected from the group consisting of manganese (Mn), iron (Fe), cerium (Ce) and praseodymium (Pr); and (ii) at least one of rhodium (Rh) and palladium (Pd) disposed on at least one inorganic oxide support.